

WHAT IS CLAIMED IS:

1. A disk cartridge, comprising:
a first cartridge containing a first disk recording medium, the first cartridge including:
at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge.
2. The disk cartridge according to claim 1, wherein the hole is provided so as to indicate the disk diameter of said each disk recording medium or an outer most peripheral position during movement of a pickup.
3. The disk cartridge according to claim 2, wherein the hole of said each cartridge is provided at a same coordinate position or at a same radial position with respect to a disk center in a disk recording and reproducing apparatus, regardless of the diameter of said each disk recording medium.
4. The disk cartridge according to claim 2, wherein length of the hole is formed to indicate (a) a disk diameter from a disk recording medium for a

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minimum disk diameter to the first disk recording medium of the first cartridge or (b) the outer most peripheral position during the movement of the pickup.

5. A disk recording and reproducing apparatus, comprising:

(a) a pickup for recording and reproducing of a disk cartridge; said disk cartridge including:

a first cartridge containing a first disk recording medium, the first cartridge including:

at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge, and

(b) a restricting member for restricting a movement of the pickup in an outer peripheral direction, which is not less than a predetermined of radius,

wherein the restricting member detects disk diameter through the hole and restricts the movement of the pickup in the outer peripheral direction, which is not less than the predetermined of radius.

6. The disk recording and reproducing apparatus

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according to claim 5, comprising a chassis which includes the restricting member,

the restricting member being made up of a plurality of restricting pins each of which is provided so as to project toward the cartridge or toward a pickup housing (a) at a position corresponding to the hole of said each cartridge and (b) at a position which indicates the disk diameter of the disk recording medium for a maximum disk diameter or the outer most peripheral position during the movement of the pickup,

wherein when the disk cartridge containing the disk recording medium having the different diameter has been loaded, said each restricting pin of the chassis contacts with a lower surface of the cartridge of the loaded disk cartridge and is pushed toward the pickup housing from the chassis so as to restrict the outer most peripheral position of the pickup, whereas restricting pins provided inside of the restricting pins to be pushed toward the pickup housing go into the hole of said each cartridge so as to avoid projecting toward the pickup housing from the chassis.

7. The disk recording and reproducing apparatus according to claim 6,

wherein each of the restricting pins is pushed out

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by an elastic material so as to project toward the cartridge of the chassis.

8. The disk recording and reproducing apparatus according to claim 6, wherein the restricting pin, which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

9. The disk recording and reproducing apparatus according to claim 7, wherein the restricting pin, which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

10. A disk recording and reproducing apparatus, comprising:

(a) a pickup for recording and reproducing of a disk cartridge;

said disk cartridge including: a hole being provided so as to indicate a disk diameter of each disk

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recording medium or an outer most peripheral position during movement of a pickup, and

(b) a restricting member for restricting a movement of the pickup in an outer peripheral direction, which is not less than a predetermined of radius,

wherein the restricting member detects disk diameter through the hole and restricts the movement of the pickup in the outer peripheral direction, which is not less than the predetermined of radius.

11. The disk recording and reproducing apparatus according to claim 10, comprising a chassis which includes the restricting member,

the restricting member being made up of a plurality of restricting pins each of which is provided so as to project toward the cartridge or toward a pickup housing (a) at a position corresponding to the hole of said each cartridge and (b) at a position which indicates the disk diameter of the disk recording medium for a maximum disk diameter or the outer most peripheral position during the movement of the pickup,

wherein when the disk cartridge containing the disk recording medium having the different diameter has been loaded, said each restricting pin of the chassis

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contacts with a lower surface of the cartridge of the loaded disk cartridge and is pushed toward the pickup housing from the chassis so as to restrict the outer most peripheral position of the pickup, whereas restricting pins provided inside of the restricting pins to be pushed toward the pickup housing go into the hole of said each cartridge so as to avoid projecting toward the pickup housing from the chassis.

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12. The disk recording and reproducing apparatus according to claim 11,

wherein each of the restricting pins is pushed out by an elastic material so as to project toward the cartridge of the chassis.

13. The disk recording and reproducing apparatus according to claim 11, wherein the restricting pin, which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

14. The disk recording and reproducing apparatus according to claim 12, wherein the restricting pin,

which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

15. A disk recording and reproducing apparatus, comprising:

(a) a pickup for recording and reproducing of a disk cartridge;

said disk cartridge including: a first cartridge containing a first disk recording medium, the first cartridge including:

at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge,

the hole being provided so as to indicate the disk diameter of said each disk recording medium or an outer most peripheral position during movement of a pickup,

the hole of said each cartridge being provided at a same coordinate position or at a same radial position with respect to a disk center in a disk recording and reproducing apparatus, regardless of the diameter of

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said each disk recording medium, and

(b) a restricting member for restricting a movement of the pickup in an outer peripheral direction, which is not less than a predetermined of radius,

wherein the restricting member detects disk diameter through the hole and restricts the movement of the pickup in the outer peripheral direction, which is not less than the predetermined of radius.

16. The disk recording and reproducing apparatus according to claim 15, comprising a chassis which includes the restricting member,

the restricting member being made up of a plurality of restricting pins each of which is provided so as to project toward the cartridge or toward a pickup housing (a) at a position corresponding to the hole of said each cartridge and (b) at a position which indicates the disk diameter of the disk recording medium for a maximum disk diameter or the outer most peripheral position during the movement of the pickup,

wherein when the disk cartridge containing the disk recording medium having the different diameter has been loaded, said each restricting pin of the chassis contacts with a lower surface of the cartridge of the

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loaded disk cartridge and is pushed toward the pickup housing from the chassis so as to restrict the outer most peripheral position of the pickup, whereas restricting pins provided inside of the restricting pins to be pushed toward the pickup housing go into the hole of said each cartridge so as to avoid projecting toward the pickup housing from the chassis.

17. The disk recording and reproducing apparatus according to claim 16,

wherein each of the restricting pins is pushed out by an elastic material so as to project toward the cartridge of the chassis.

18. The disk recording and reproducing apparatus according to claim 16, wherein the restricting pin, which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

19. The disk recording and reproducing apparatus according to claim 17, wherein the restricting pin, which is provided at the position which indicates the

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disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

20. A disk recording and reproducing apparatus, comprising:

(a) a pickup for recording and reproducing of a disk cartridge;

said disk cartridge including: a first cartridge containing a first disk recording medium, the first cartridge including:

at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge,

the hole being provided so as to indicate the disk diameter of said each disk recording medium or an outer most peripheral position during movement of a pickup,

the hole, length of the hole being formed to indicate (a) a disk diameter from a disk recording medium for a minimum disk diameter to the first disk recording medium of the first cartridge or (b) the outer most peripheral position during the movement of

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the pickup, and

(b) a restricting member for restricting a movement of the pickup in an outer peripheral direction, which is not less than a predetermined of radius,

wherein the restricting member detects disk diameter through the hole and restricts the movement of the pickup in the outer peripheral direction, which is not less than the predetermined of radius.

21. The disk recording and reproducing apparatus according to claim 20, comprising a chassis which includes the restricting member,

the restricting member being made up of a plurality of restricting pins each of which is provided so as to project toward the cartridge or toward a pickup housing (a) at a position corresponding to the hole of said each cartridge and (b) at a position which indicates the disk diameter of the disk recording medium for a maximum disk diameter or the outer most peripheral position during the movement of the pickup,

wherein when the disk cartridge containing the disk recording medium having the different diameter has been loaded, said each restricting pin of the chassis contacts with a lower surface of the cartridge of the

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loaded disk cartridge and is pushed toward the pickup housing from the chassis so as to restrict the outer most peripheral position of the pickup, whereas restricting pins provided inside of the restricting pins to be pushed toward the pickup housing go into the hole of said each cartridge so as to avoid projecting toward the pickup housing from the chassis.

22. The disk recording and reproducing apparatus according to claim 21,

wherein each of the restricting pins is pushed out by an elastic material so as to project toward the cartridge of the chassis.

23. The disk recording and reproducing apparatus according to claim 21, wherein the restricting pin, which is provided at the position which indicates the disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

24. The disk recording and reproducing apparatus according to claim 22, wherein the restricting pin, which is provided at the position which indicates the

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disk diameter of the disk recording medium for the maximum disk diameter or the outer most peripheral position during the movement of the pickup, is fixed so as to project toward the pickup housing of the chassis.

25. A disk recording and reproducing apparatus, comprising a pickup that carries out recording and reproducing with respect to a disk cartridge,

said disk cartridge including: a first cartridge containing a first disk recording medium, the first cartridge including:

at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge,

the hole being provided so as to indicate the disk diameter of said each disk recording medium or an outer most peripheral position during movement of a pickup,

the hole, length of the hole being formed to indicate (a) a disk diameter from a disk recording medium for a minimum disk diameter to the first disk recording medium of the first cartridge or (b) the outer most peripheral position during the movement of the pickup,

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said apparatus having a structure in which length of the hole is detected so as to mechanically define a movable outer peripheral position of the pickup.

26. A disk recording and reproducing apparatus, comprising a pickup that carries out recording and reproducing with respect to a disk cartridge,

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said disk cartridge including: a first cartridge containing a first disk recording medium, the first cartridge including:

at least one hole for recognizing a relation in size between a disk diameter of a second disk cartridge which contains a second disk recording medium having a different disk diameter and a disk diameter of the first cartridge,

the hole being provided so as to indicate the disk diameter of said each disk recording medium or an outer most peripheral position during movement of a pickup,

the hole, length of the hole being formed to indicate (a) a disk diameter from a disk recording medium for a minimum disk diameter to the first disk recording medium of the first cartridge or (b) the outer most peripheral position during the movement of the pickup, and

(b) a chassis,

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said chassis including a single restricting pin, provided so as to be movable radially and to contact with the pickup, which is inserted to the hole of each of the cartridges in loading.

27. A disk recording and reproducing apparatus, comprising:

(a) a pickup for carrying out recording and reproducing with respect to disk cartridges, each of which contains a disk recording medium having respective different disk diameters, and

(b) a chassis, including:

a restricting member which presses a side wall of the cartridge and contacts with the pickup when the disk cartridge is loaded to restrict a movement of the pickup in an outer peripheral direction, which is not less than a predetermined of radius.

28. A disk recording and reproducing apparatus, comprising:

(a) a pickup for carrying out recording and reproducing with respect to disk cartridges, each of which contains a disk recording medium having respective different disk diameters, and

(b) restricting means for restricting movement

amount of the pickup in accordance with a size of the loaded disk cartridge.

29. The disk recording and reproducing apparatus according to claim 28, further comprising:

determining means for determining the size of the loaded disk cartridge.